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Indiana Native Plant Society

Spring 2022

A Hoosier Orchid Big Year: Part 1

By Wes Homoya

As you perhaps have surmised from the title, this tale describes a different kind of Big Year than the popular ones that birders regularly do (never heard of one? Go watch the 2011 film entitled "The Big Year"). It all began with a conversation I had with my parents, Mike and Barb, sometime in 2019. That year, and in the few years prior, my "biocuriosity" progressively expanded from my beloved birds to all sorts of non-feathered biota, principally kinds that I could forage and eat, but also to orchids. These famous members of our floral community had been on my radar for some time – after all, how could they not when your father is the author of "Orchids of Indiana"?

Paul Rothrock

Wes Homoya

Top: A close-up of a tuberous grass-pink looking much like an alluring, fantasmical animal.

Bottom: Our orchid team, including a slightly bored Soren, espying a clone of whorled pogonias.

Despite this fortuitous filial connection, I had a relatively minor experiential relationship with our state's orchids. So, after much deliberation and discussion, perhaps a touch of hyper-optimistic arm-twisting by yours truly, and with vast hopes and plans to see all of Indiana's extant native orchids in the wild in one calendar year, we prepared for an epic 2020. And then, well… you know how THAT turned out for so many interpersonal and travel-related dreams.

The pandemic only temporarily delayed us. In 2021, the availability of vaccines allowed us to be together again for long periods of time in close proximity in enclosed spaces (like cars), and just in time for spring. We could begin our quest!

On the last day of April, during a guided hike our family donated for an Amos Butler Audubon fundraiser, we set eyes on our first species. Nestled in a mauve and azure sea of spring beauties and Virginia bluebells, a petite cluster of pastel-hued showy orchis (*Galearis spectabilis*) adorned a sun-dappled slope. We were on the board, and after savoring the moment, snapped what would be the first of many family/orchid "selfies". The moment was made even more special by it being at one of our favorite natural areas, Big Walnut Nature Preserve, and by sharing it both with our companion Ruth Ann Ingraham, who'd made the winning bid for the excursion, and with a recently returned Louisiana waterthrush, which repeatedly regaled us with its sweet, slurry song reverberating throughout the ravines.

Inside

May is my favorite, and subsequently most hectic, month each year, primarily thanks to morels, spring migration (that catalyzes the Birdathon and Indiana Dunes Birding Festival), my birthday, and last but not least, the Florathon! This May, though, had an added bonus – a full dozen mind-blowing orchidaceous gems. I'm realizing already that I probably should make a quick aside – I can't imagine your patience is boundless – so I won't burden you with the tale of every species but will instead attempt to only touch on a few highlights.

Half of the aforementioned May orchids were the fan favorite lady's-slippers (*Cypripedium* spp.), beheld in a variety of dimensions and white, pink, and yellow tones. Our only foray into the east-central portion of the state was nevertheless one of the most memorable, as nephew/grandson/sidekick Soren joined us that day (not that he had

Orchid — continued on page 3

John Flynn:
Purveyor of Native Wild Food Plants

By Mary Damm

Indiana's forests and wetlands have many native plants that are edible and some are downright delectable! The hills of southern Indiana – with their woods, creeks, and small farms – provide opportunities where foragers can find fruits and greens. One forager, John Flynn, sells his wild-collected plants and mushrooms at the Bloomington Farmers' Market, where I and others have the good fortune to buy and enjoy. His harvests come from his farm and nearby woods (where he has permission) in Lawrence County.

Paul Rothrock

Since John Flynn specializes in food products from native plants and fungi, he has one of the more unusual product-lines available at the Bloomington Farmers' Market.

In the spring, John fills his market table with ramps (with their strong onion taste), which he sustainably harvests from his farm in April and early May before tree-canopy closure. Ramps (*Allium tricoccum*) grow in big patches in damp, loose soil along creeks, and smaller plants grow on slopes with shale-derived soils in south-central Indiana. Maple syrup is also on John's spring table. One gallon of his syrup requires over 40 gallons of sap from sugar maple (*Acer saccharum*), which he boils down to produce the syrup. Syrup can be made from other tree species, but requires up to 100 gallons of sap for one gallon of syrup.

As the season progresses, his table fills with blackberries (*Rubus* spp.) in July, pawpaws (*Asimina triloba)* in August, and persimmons and persimmon pulp (*Diospyros virginiana*) in September-October. Other favorites with customers include jams (blackberry) and jellies, especially elderberry (*Sambucus canadensis*) and wild grape (*Vitis* spp.). Depending upon the amount of summer rain, John provides an amazing larder of mushrooms – chicken-of-the-woods (*Laetiporus sulphureus*), hen-of-the-woods (*Grifola frondosa*), lion's mane (*Hericium erinaceus*), and oysters (*Pleurotus ostreatus*). For food safety, the mushrooms are inspected for correct identification, and only a limited number of species can be sold at the Bloomington market.

Since his populations of the plants are stable, John knows where to find the wild-collected plants year by year. In fact, he transplants young individuals around his farm to increase their populations and thins blackberry patches so that the remaining stems produce larger fruit. And, instead of mowing, he lets useful plants, such as elderberry, grow on his property. He observed that, at least in his locale, most native food plants do not seem over-harvested. People don't want to be in the woods with ticks and insects or to collect in briars in the heat of the summer. At least in the Bloomington area many would rather buy wild native plants than collect them.

Over the years, John has harvested native plants that he did not care for – some were bland-tasting, while others were painful. Jack-in-the-pulpit (aka Indian turnip, *Arisaema triphyllum*) "sets your mouth on fire" if not processed properly and collecting stinging nettles (*Laportea canadensis*) will "drive you wild."

John has harvested and eaten native plants and mushrooms his entire life. He began collecting berries and nuts as a boy on the family farm. His mom made pies and jellies from the harvest. But, he did not collect ramps until he was older. As a boy, John and his siblings would venture around the farm while their dad worked and return home smelling like onions, which displeased their mom. As an adult, John got more serious about harvesting them and experimenting with recipes, such as potato-ramp soup.

Surprisingly, much of John's knowledge of wild native plants and mushrooms came from reading books, including some by Euell Gibbons (e.g., *Stalking the Wild Asparagus*) and articles in *Mother Earth News*. His grandparents collected dandelion greens (*Taraxacum officinale*), and his mom and aunts recalled collecting the greens as children, but did not collect as adults. Unfortunately, by the time John became deeply interested in harvesting wild plants, his older relatives had passed away and their knowledge of foraging Lawrence County plants was gone.

Except for persimmon, all of the woody plants that John harvests grow throughout Indiana; persimmon naturally occurs only in the southern half of the state. And, all except for pawpaw grow in human-created environments – old fields, fencerows, and roadsides; pawpaw grows

Flynn — continued at right

Orchid — *continued from front page*

much choice where his babysitters were taking him). We like to think maybe a little love for flora rubbed off on him as we basked in the glory of a quiet hillside carpeted with large whorled pogonias (*Isotria verticillata*). In one of the more remarkable twists of fate in this journey, old friend and colleague Bob Easter of NICHES Land Trust chanced upon a rare long-bract frog orchid (*Coeloglossum viride*) during his restoration work, and was kind enough to share its location so that we could add it to not only our Big Year list, but our Florathon tally as well! Memorial Day Weekend drew the month to a close in fine fashion as it granted us 5 new species, including a brace of twayblades (*Liparis* spp.) and the first of many ladies' tresses (*Spiranthes* spp.).

By June, the distraction of morels and migration had passed, but we still had "mission drift" from time to time in the form of Brood X periodical cicadas, chanterelles, and kitchen remodels, besides the usual social and vocational obligations. Despite all odds, we managed to focus long enough to maintain our streak throughout the month. Deep in the gullies of Morgan-Monroe State Forest, we labored for some time with our comrade, DNR Regional Ecologist Andy Reuter, and nearly departed the woods empty-handed. Yet at the eleventh hour, we stumbled upon a sizable patch of green adder's-mouth (*Malaxis unifolia*), one of which was the largest my dad had ever seen (did I mention he was Indiana's state botanist for almost 40 years?).

"If you can't be in awe of nature, there's something wrong with you." These (paraphrased) words of the late, great Alex Trebek traipsed through my mind many times this past year as I read his autobiography and traversed many truly awesome landscapes with my folks. One of my epiphanies was discovering the wide diversity of habitats our state's orchids occupy. Forests and fens, glades and gorges – the ~40 species still gracing our land truly run the gamut in this respect. Later on in June, we'd visit two that are particularly unique, the first coming on what would be our only "four species day" of the year. Bogs. What a great word, and what an otherworldly environment. Indeed, the term alone evokes a flood of emotions and images to anyone who's ever set foot, or lost a boot, in one. But I digress – our trudging that day transported us into a galaxy of sundews (*Drosera* spp.) and pitcher plants (*Sarracenia purpurea*), and a panoply of pink prizes in the form of rose pogonias (*Pogonia ophioglossoides*) and tuberous grass-pinks (*Calopogon tuberosus*).

*Our documentation of pink lady's-slipper (*Cypripedium acaule*), a species bearing a bulbous lip, that thrives in Indiana bogs.*

Wes Homoya

As June concluded, we found ourselves in a slightly more accessible setting, on a tour of fellow orchid enthusiast Brian Lowry's farmland. The Scott County property is an inspiring testament to the Wendell Berry-esque land ethic of the Lowry clan, and our morning there left an indelible mark on each of us, due in no small part to our being escorted directly to the desired spring ladies' tresses (*Spiranthes vernalis*), smack dab in the middle of the donkey pasture. Go figure!

[to be continued in the summer issue of INPS Journal]

Kevin Tungesvick

The showy orchis was the first species "bagged" visually in our Big Year.

Wes Homoya, a member of the INPS Central Chapter, is a professional field ornithologist, and leads international birding trips for Natural Selections Tours. Orchids, pawpaws, and heterotrophic plants really get his floral frenzy going.

Flynn — *continued from left*

in shady woods near streams. For grapes, there are six native species in Indiana, and all are edible.

So, whether you are interested in supporting your local forager or collecting native wild food plants yourself, try including native plants in your diet. Indiana habitats have many wonderful taste sensations to offer!

Mary Damm, a member of the INPS South Central Chapter, is a prairie ecologist and is active in sustainable agriculture.

Wild Leeks
(*Allium burdickii* and *A. tricoccum*)

By Michael Homoya

Ah, give me onions (*Allium*)! Even though they make us tear-up as we slice and dice them, we love them anyway. But there's more to these culinary staples than the few selections available at the farmer's market, grocery store, or our garden. Their diversity consists of nearly 700 species worldwide with almost 100 in North America. Indiana is home to at least 8 species, of which 4 are native: narrow-leaved wild leek (*A. burdickii*), wild garlic (*A. canadense*), nodding wild onion (*A. cernuum*), and wide-leaved wild leek (*A. tricoccum*).

Paul Rothrock

Some botanists think of our two wild leek species as simply varieties of each other. But, in addition to the difference in the foliage, the narrow-leaved species (top) blooms several weeks earlier and has fewer flowers per inflorescence than the wide-leaved species (bottom).

The wide-leaved wild leek is likely the most familiar to most of us. Also known as ramp(s), it is the largest native onion in Indiana. A denizen of moist forests, it is hard to miss their bright green leaves in early spring. Some say they superficially resemble those of ornamental tulips or lily-of-the-valley. The blades reach up to 1 ft (30 cm) long and 4 in (10 cm) wide, each with a distinct purplish-red stalk and sheath at its base.

These leaf characteristics help distinguish it from the similar narrow-leaved wild leek. The blade of the latter is about half as wide as wild leek and narrowly lance-shaped, gradually tapering to its base without forming a distinct stalk. In addition, the leaf base is green, not reddish.

These two are unique among our native onions by the presence of their comparatively broad leaves. As well, the leaves are ephemeral, appearing above ground for only a few weeks before withering away without putting forth any flowers. Don't be disappointed though, blooming will come later. The time for flowers is during the heat of summer when few other forest wildflowers dare appear. Seeing a mass of these white, leafless flower clusters, looking like golf balls perched on pencil-thin tees, can bring cheer to an otherwise mostly drab forest understory. Another native species that blooms in summer after its leaves have withered away is cranefly orchid (*Tipularia discolor*). Its flowers are arrayed in an elongated raceme.

Both species of wild leeks occur nearly statewide, although they appear to be absent from the far southwestern corner of the state. Of the two, narrow-leaved wild leek is generally more widespread, and it tends not to form the large, dense populations that are commonly found with the wide-leaved species.

Like our garden variety onions, wild leeks are a popular culinary ingredient, at least to those willing to venture out into the woods in early spring to gather some. Ramps are fun to forage, giving one the opportunity to momentarily live off the land, not unlike that done by early American peoples. Indigenous Americans consumed ramps to remedy colds and treat intestinal worms. (On a side note, the name Chicago originates from a Miami-Illinois word for wild leek, *shikaakwa*. It's quite likely an abundance of wild leek was present in the city's modern-day location).

For many folks, especially in parts of the Appalachian Mountains, eating ramps is considered an annual ritual not to be missed. This is all fun and good, except that the increasing popularity of ramps appears to be causing significant declines to certain foraged populations. Some of this is likely due to "ramp festivals," where huge quantities of ramps are collected to satisfy the appetites of festival goers.

Whether it be for a ramp festival, or personal use, sustainable harvesting within populations needs to be practiced. While several internet sites suggest methods of harvest to maintain viable populations, some of those recommendations do little to provide sustainability. The method that appears to be the most sustainable involves taking only single leaves and stems from mature plants bearing at least two leaves. This allows them to continue capturing light energy and survive. Removing the bulb obviously kills the plant. To me, the flavor of the leaf and stem match that found in the bulb. Taking a few plants with bulbs from a large population might seem okay as long as it is being closely monitored to determine population trends. The reality, however, is that most wild populations are not monitored, and over time these populations, if visited independently by several people who are oblivious to each other's visits, can deplete a population.

So, get out into the woods and enjoy the bounty of our native plants. Just forage conservatively, and as always, get permission from the landowners where you collect.

Mike Homoya, a past president of INPS and member of the Central Chapter, has authored multiple books on our Midwest flora.

Forager's Diary: Wild Leeks (*Allium* spp.)

By Michael Hood

I always eagerly look forward to spring and my favorite springtime activity, harvesting and cooking with wild leeks, aka ramps (two species: *Allium burdickii* and *A. tricoccum*). I always get a kick out of the fact that I am harvesting and processing ramp leaves in April when most Indiana gardeners have yet to cultivate their garden, let alone harvesting from it! I make exploratory forays to my favorite spot as early as mid-February. Just running my fingers through the loose, rich, and dark soil puts a big smile on my face.

I harvest just one leaf (and stem in the broad-leaf species) from a plant so the bulb can benefit from the photosynthesis of the undisturbed leaf (or two, on a three-leaved plant), and from only a small portion of the population. Harvesting only the largest leaves in a colony allows more plants to be left undisturbed. I never take ramp bulbs, both because I do not find the taste of the bulbs to be different from the leaves, and because it kills the plant. It takes at least seven years for ramp seeds to produce a harvestable colony. It is likely that many ramp colonies have been in place for over a hundred years, sometimes longer than the oldest trees growing nearby! And I want my colony to persist far beyond my lifetime. By following my harvest protocol I have seen an increase in the size of the colony at my favorite spot since I started harvesting several years ago.

I am often able to harvest ramps for about six weeks, from late March to early May (when leaves of canopy trees are fully formed) in my home county of Ripley County. Initially the plants can be easy to spot from a distance as no other spring ephemerals are yet producing dense colonies. However, the window of opportunity can be as short as two to three weeks, as other spring ephemerals appear.

It took me three to four years of extensive searching to find a ramp "patch" that had an abundant population and on land where I am allowed to harvest. I first located the population in late summer when I came upon a dense colony of the plant's shiny black seeds perched on umbels atop tall stalks. Just like morel hunters, I keep my spot secret! This minimizes the risk of overharvesting as can easily happen when multiple people forage in the same spot, unknown to one another. Overharvest is particularly likely near urban areas, but poor stewardship of populations can occur anywhere. I continue to watch for additional patches where I may obtain permission to sustainably harvest.

Ramps are a popular menu item at farm-to-table and high-end restaurants because they are delicious in many different preparations. I find the flavor to be a combination of raw garlic and onion (but more mild) when raw, and reminiscent of sauteed onions when cooked.

Raw ramp leaves have a hotter 'bite' than blanched/cooked, which I prefer in the ramp pesto that I freeze for year around use on eggs, gnocchi, pasta, rice/risotto, potatoes, and on toast. I simply chop the leaves finely, roast and coarsely chop black walnuts (pecans also taste delicious), and mix with coarsely grated parmesan (or Parmigiano Reggiano), extra virgin olive oil, and salt. No basil or garlic needed! For the biggest bite, harvest earlier in the harvest season, and preferably the narrow-leaved species (*A. burdickii*).

Paul Rothrock

The fully expanded foliage of narrow-leaved wild leeks as seen in mid-April. Also note that the capsule fruits from the prior-year have split open to reveal shiny seeds.

I also like to use raw chopped ramps in compound salt with butter or oil; or, mixed into sausage, ground meats, or pasta noodle dough (be careful with water content). They are also delicious pickled, and make a delicious fermented kimchi. A good recipe appears in the book *Cooking Wild* by John Ash (2016).

Ramp leaves become sweeter when sauteed, and this works well for ramps harvested once they reach full growth. Sauteed ramps are delicious on their own, on eggs, omelets, miso and other soups, or packed into ravioli, and just about any dish where you would use cooked onions. One of my favorite dishes is an open-faced grilled cheese sandwich slathered with ramp pesto and topped with sauteed fresh ramps; I prefer rustic bread instead of grocery varieties, grilled with ghee or butter in a cast iron pan. It takes me just 10-15 minutes to prepare.

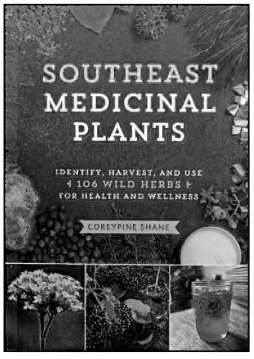
Grilling or roasting ramp leaves lends complex notes. Toss in oil and salt first. Ramp leaves can be canned, or blanched, shocked, and frozen. A delicious snack can be made by salting fresh ramp leaves in a bowl and letting them rest until they become darkened; dehydrate until crisp. If these ideas awaken your taste buds, check out additional resources for preparing foraged foods listed below.

Harvest properly and enjoy!

Diary — resources listed on page 9

Book Review:

Southeast Medicinal Plants



By George Armstrong

CoreyPine Shane's newly published *Southeast Medicinal Plants* from Timber Press is a pleasant introduction to the topic of medicinal plants in the eastern United States (i.e., Kentucky southward). It provides practical information about how to forage for medicinal plants, create herbal medicines, distinguish between useful plants and their toxic look-alikes, and determine when not to collect infrequent or non-resilient wild plants.

Southeast Medicinal Plants is structured as a resource for beginners, starting with a brief introduction followed by a lengthy, alphabetized profiling of medicinal plants in the tradition of a classic botanical field guide. In the introduction, Shane playfully guides readers through botanical terminology relevant to medicinal plant identification and other basic information required to safely collect medicinal plants and create herbal medicines such as tinctures, teas, and oil infusions. His approach to equipment is minimalistic, much of which is likely already in the tool shed of any gardener. He provides sensible information about over-harvesting at-risk plants, stating that if a plant is not in obvious abundance, it is best not to harvest. Shane also connects with several abstract topics, such as conservation and how people see the natural world around them. Medicinal plants have shaped his understanding of the natural world. He uses the popular metaphor of the Green Wall to describe his own epiphany experience when he learned to identify individual plants in his surroundings

Like any botanical field guide, *Southeast Medicinal Plants* is standardized for ease of reference. Medicinal plants are organized by common name. Each entry presents plant parts used to make medicine and information about identification, habitat, medicinal use, abundance, and herbal preparation. This standardized formatting makes it easy for readers to notice cautionary notes about toxic plants or herbal preparations. Some of these warnings are especially relevant to *INPS Journal* readers who might be foraging for the pain-relieving angelicas (especially *Angelica venenosa*) that have umbel inflorescences. These inflorescences are similar to those of poison hemlock (*Conium maculatum*) which is famously toxic and abundant in Indiana roadsides and waste spaces. Shane also indicates that readers foraging for popular wild edibles such as ramps (*Allium tricoccum*) this spring should be aware of the toxic look-alikes, lily of the valley (*Convallaria majalis*) and false hellebore (*Veratrum woodii*). He encourages common sense and cross-reference identifications between two field guides; and when in doubt don't collect.

A second caution needs emphasis: unfortunately some of the medicinal plants in this field guide are rare to infrequent in Indiana or recover too slowly from harvesting for responsible collecting. Examples include black cohosh (*Actaea racemosa*), blue cohosh (*Caulophyllum thalictroides*), gentians (*Gentiana* spp.), mountain mints (*Pycnanthemum* spp.), partridgeberry (*Mitchella repens*), passionflower (*Passiflora* spp.), pipsissewa (*Chimaphila maculata*), skullcaps (*Scutellaria* spp.), wild sarsaparilla (*Aralia nudicaulis*), and wood betony (*Pedicularis canadensis*). Though not emphasized by Shane, perhaps cultivating some medicinal plants at home is an alternative to harvesting wild populations outside of their abundant range. The gardeners among us might find the experience of building a perennial apothecary garden rewarding for a number of reasons.

Alternately, there are several plants in *Southeast Medicinal Plants* that are abundant in Indiana and appropriate for beginners due to their ease of identification, resilience, and relatively safe use. A few examples include blackberries (*Rubus* spp.) for eating and the treatment of diarrhea; black walnut (*Juglans nigra*) for eating and using the hulls for antiparasitic treatments; white pine (*Pinus strobus*), the bark tea can be used to treat coughs and the sap as an antimicrobial resinous bandage to seal wounds; and nettles (*Urtica* spp.) used for eating and allergy relief. Also abundant in Indiana, but perhaps less widely known, is the common burdock (*Arctium minus*) which has a nourishing, cleansing, and tasty taproot; the colorful goldenrod (*Solidago* spp.) which can be used as a nasal decongestant; the large mullein (*Verbascum thapsus*), which has a memorable inflorescence and can be used to expel phlegm from the lungs; and finally the weedy plantains (*Plantago* spp.) which, as a poultice, quickly alleviate the pain of an insect bite.

— continued at right

It is important to note that the knowledge of medicinal plants in the book reflects the cultural heritage of Native American, African American, Afro-Caribbean, Latin, European peoples, and others who call the Southeast home. In general, Shane represents these legacies respectfully, but with some limitations. Readers wanting to learn more about the medicinal plant knowledge of these peoples might feel unsatisfied with the imbalance created by his persistent connections to Chinese herbal medicine, which likely reflects his training at the Institute of Chinese Herbology. I also have reservations about the term "wildcrafting," which is used prominently. I understand this term might be used by some wild plant collectors in the Southeast, but I doubt that people whose cultural heritage includes medicinal plant knowledge would refer to the collection of medicinal plants as "wildcrafting" with any seriousness. For this reason, I fear that some might find "wildcrafting" not only silly, but denigrating.

In some ways it seems Shane's characteristically playful tone is both his strength and weakness. When he shares a story about why plantain is one of the first medicinal plants we should teach our children, we see his playful tone at perhaps its best – helping beginners make joyous, memorable connections with medicinal plants. Yet when he diverts his explanation of why diarrhea is a major cause of death in children worldwide to the practicality of using blackberry root to quell diarrhea before catching a flight in India, he missed an opportunity to help readers make a meaningful connection to how medicinal plants are used to this day as a primary treatment for disease in many parts of the world.

Ultimately, *Southeast Medicinal Plants* is a useful resource to the curious individual just starting to learn about wild medicinal plants. The text is approachable, informative, and inspiring. This serves Shane's ultimate goal, to not only help readers identify and use medicinal plants, but to begin developing a different way of seeing the world.

George Armstrong is a graduate student in Indiana University's Department of Anthropology and African Studies Program and a volunteer intern in the Deam Herbarium.

INPS Plant Auction: May 7 to May 14

By Melissa Moran

After a successful virtual and statewide event in 2021, the Plant Auction will continue online in 2022. This virtual auction format has the advantage of reaching members and non-members throughout Indiana and provides fantastic offers of rare native plants, private garden tours, guided hikes by knowledgeable botanists, and choice natives from our invasive-free Grow Indiana Natives vendors.

Sarah Bernacchi

In addition to being a successful fundraiser for the Indiana Native Plant Society, some of the 2021 successful bidders enjoyed picking up their plants from the donors, visiting the donor's garden, or sharing gardening tips with a fellow native plant lover.

To participate in the auction either as a native plant donor or a bidder, you must register with Givergy (*us.givergy.com/indiananativeplants2022*). When you place your first bid, you will be asked to enter credit card information.

If you have items to donate, please contact *auction@indiananativeplants.org* or complete the "Donate an Item" form on the Givergy webpage (*us.givergy.com/indiananativeplants2022*). All donated items, including plants, must be accompanied by a photo. Donated plants must be robust and should be dug and potted several weeks before the auction date.

This year, the Indiana Native Plant Society Auction will be open for online silent bidding from Saturday May 7 to Saturday May 14. Register now and plan on a week of bidding fun.

Visit the auction webpage (*https://indiananativeplants.org/native-plant-auction/*) for more information. Questions? Please send them to *auction@indiananativeplants.org*.

Melissa Moran, a member of INPS Central Chapter, chairs the INPS Plant Sale & Auction Committee.

@indiananativeplants.org

Mission

To promote the appreciation, preservation, scientific study, and use of plants native to Indiana.

To teach people about their beauty, diversity, and importance to our environment.

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INPS News

Wake Up, Woods

Don't forget to pick up a copy of *Wake Up, Woods* before our spring ephemerals pop from their winter sleep. And, be sure your friends and family, young and old and in between, have their own copies. They will love the breath-taking botanical illustrations of Indiana springtime flora and pollinators as well as scientific information and charming poetry. This award-winning book, created in 2019 by the Indiana Native Plant Society, may be purchased in many locations including Kids Ink Children's Bookstore in Indianapolis, state park gift shops, the Indiana State Museum, and online.

INPS Website

Because our INPS website has an abundance of information, we sometimes overlook its many gems. One example: Amy Perry (INPS Central Chapter) observed that new members often seek landscaping advice. The "Landscaping" tab (*https://indiananativeplants.org/landscaping/*) is an excellent place to start. One impressive feature is "Native Plant Palettes." It provides species lists relevant to different landscape settings. In addition, it features links to past INPS articles and other organizations with information about landscaping with natives.

Clarification

The winter issue of *INPS Journal* listed 2021 sponsors of the annual conference, including CILTI. The abbreviation stands for Central Indiana Land Trust (see *www.conservingindiana.org*).

Diary — *continued from page 5*

References

Ash, J. 2016. Cooking Wild: More than 150 Recipes for Eating Close to Nature. Running Press, Philadelphia, PA.

Bergo, A. 2021. The Forager Chef's Book of Flora. Chelsea Green Publishing, White River Junction, VT.

Viljoen, M. 2018. Forage, Harvest, Feast: A Wild Inspired Cuisine. Chelsea Green Publishing, White River Junction, VT.

Michael Hood, a member of INPS South Central Chapter, is an avid forager of wild edibles and medicinal herbs. He is a three-time winner of the cooking competition at the Great Lakes Foragers Gathering.

2021 INPS Biodiversity Grant Awards

By Molly Baughman

INPS Biodiversity Grants is pleased to fund four projects to be completed in 2022. Grant awardees include the Boone County Master Gardener Association, Indiana University South Bend, Red-Tail Land Conservancy, and Sycamore Land Trust. A synopsis of each proposed project follows.

Boone County Master Gardener Association was awarded $1,261 for their Linking Native Plants to Garden Production project. INPS funds will be used to purchase materials to create two native companion garden beds in their vegetable garden, a pathway including three native beds, and educational signs. The educational signs and demonstration garden will showcase how native plants enhance vegetable gardens and serve as beautiful and functional landscaping.

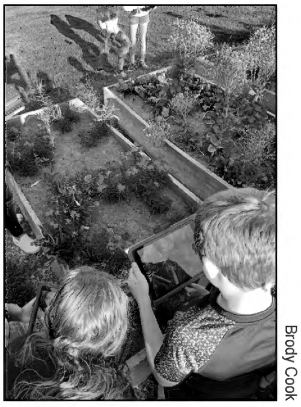
Indiana University South Bend was awarded $600 to purchase plants and sign materials for a native pollinator garden at the campus. Species were selected for drought tolerance and bloom time to have flowers available for much of the spring, summer, and fall. The garden bed will include signs with species names showcasing species that are relatively low maintenance due to their drought tolerance.

Red-Tail Land Conservancy was awarded $1,370 to create an educational pollinator garden at the Dutro-Ernst Woods Nature Preserve. INPS funds will purchase a diverse prairie native seed mix and sign materials to install the native garden along the border of the parking lot. The garden will have high visibility, demonstrating native landscaping to visitors with interpretive signs to offer continuous education.

Sycamore Land Trust was awarded $1,350 towards the creation of a native plant nursery at their headquarters. INPS funds will be used to purchase growing materials to start the native nursery. Seeds will be collected locally from species indigenous to south-central Indiana to grow plugs for restoration activities at various nature preserves. The project will also educate the public on seed collecting to grow native plants.

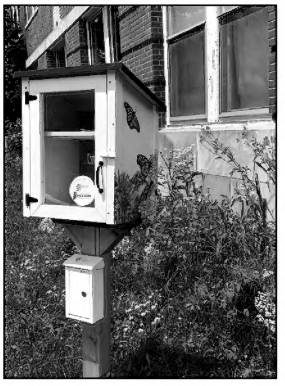
Applications for this year's biodiversity grant awards will be accepted from September 1 to October 1, 2022. Guidelines are available at *https://indiananativeplants.org/inps-biodiversity-grants/*.

Molly Baughman, a member of the Central Chapter of INPS, chairs the Biodiversity Grants Committee.



Brody Cook

Wabash City Schools established a native pollinator plot at Wabash Middle School funded by a 2020 biodiversity grant.



Blair Bevers

Johnson County Soil and Water Conservation District created the Little Native Seed Library Trail funded in part by a 2020 biodiversity grant. To learn more, visit their website: https://jocoswcd.org/librarytrail.

Pink Spring

By Stephanie Frischie

I'm writing this essay in January, a season of cozying up by the fire sipping lots of hot drinks, winter botany hikes, reading, cleaning seeds, and absorbing the electric sunsets. I also am daydreaming forward – to when buds burst and spring ephemerals get their turn in the bright warming sun. Flowers reopen their partnerships with insect pollinators, providing them nectar and pollen in exchange for moving genes around.

Judy Gallagher/flickr. CC BY 2.0

A spring beauty flower and the pollen specialist spring beauty miner bee collecting pale pink pollen onto tufts of hair (scopae) to carry back to her underground nest.

There are six main groups of insect pollinators: bees, beetles, butterflies, flies, moths, and wasps. Of these, one is the "best" at moving pollen. Which one? The bees. Why? Bees (clade Anthophila) are unique among these groups in that they actively seek pollen. They typically gather it and take it to their nest to provide food for their larvae. In the continental U.S., there are roughly 3,600 species of native bees, each with its own life history and relationship to specific plants and habitats. Our natural world is all about interactions on multiple levels, but let's focus on a single bee species and a single plant species.

The bee is *Andrena erigeniae*,[1] known by the common names of spring beauty miner bee or spring beauty andrena. Bees in the genus *Andrena* are mining bees that nest by digging tunnels and chambers into the ground. These are solitary bees – each female individually chooses the location for her nest in a spot of suitable soil, digs the nest, and lays eggs. She then collects pollen and nectar for herself and the larvae she raises as a single mother. Nearly 70% of our native bee species make their nests in the soil.

The genus *Andrena* has many species which are pollen specialists, i.e., they only collect and eat the pollen of a single plant species or of closely related plant species. These pollen specialists are called oligolectic. The etymology is "oligo" meaning "few" and "lectic," meaning to collect or gather. In contrast, polylectic bees are generalists and collect and eat pollen from a variety of plant species or families. Since oligolectic bees utilize pollen from only one or a few specific plant sources, they are dependent on that plant species. This fidelity generally makes them more effective pollinators since their movement from flower to flower only transfers pollen to and from the same plant species.

Tying these points together then, here's the big reveal if the common names didn't already make it obvious – the spring beauty miner bee is a pollen specialist of spring beauty (*Claytonia virginica*). Spring beauty was one of the candidates for 2022 INPS Plant of the Year, but it lost to a worthy contender, butterfly weed (*Asclepias tuberosa*). During the voting, I checked the box for spring beauty for several reasons. It begins blooming quite early and continues for an extended period. As the flowering stems age, their color shifts from green to a lovely red. Soon black, lustrous seeds explode from capsules. These are gathered by ants who disperse them. Spring beauty grows in a range of soil moisture conditions, in sun and in shade, in high quality natural areas as well as among the turfgrass in mowed, non-herbicided yards. The flowers and leaves are a contrast in pale delicateness and succulent toughness. A closer look reveals white petals that are striped with pink, and as a flower shifts from female phase to male phase, the anthers change from white to pink in color. Specialist bees use chemical and visual signals to find their host plants.

The various species of *Andrena* collect and carry pollen on a specialized patch of hairs, called scopae, high on their legs. A patient observer of spring beauty flowers may see dozens of native bee species collecting pollen onto their legs, in addition to the specialist spring beauty miner bee. Also, watch for male *Andrena* bees hovering above patches of spring beauty, since they learn this to be a concentrated location for females (reported by Laura Rericha in *Flora of the Chicago Region*).

While spring beauty is a common wildflower, perhaps even ubiquitous to a trained eye, it often seems overlooked. However, for the spring beauty miner bee, it means everything.

One more thing – spring's arrival is eagerly anticipated, but all things in moderation, including spring garden clean up. The dried leaves, last year's stems, and the soil are sheltering pollinators and other invertebrates through the winter, so part of gardening for pollinators includes providing that cover until days are consistently warm and insects become active and mobile. More information and

Spring — continued at right

1 The specific epithet, *erigeniae*, was assigned in error, linking this bee to another early bloomer, *Erigenia bulbosa* or harbinger-of-spring.

Caution To Would-Be Foragers: Be a Good Taxonomist

By Paul Rothrock

Gathering plants for food and medicinals is a fun, recreational activity, but not one to be entered into lightly. Aside from pursuing these activities in a responsible manner, i.e., one that does not reduce populations of our native flora, one should consider personal safety.

Poison hemlock (*Conium maculatum*) and water hemlock (*Cicuta maculata*), both in the carrot family, provide the most dramatic example of safety-concern in our Indiana flora. Each of these plant species can cause death even when ingested in small quantities. They are deemed the most poisonous plants in North America!

Poison hemlock is a non-native species that has become abundant in our roadsides and other disturbance habitats in recent years. In fact, last year, two of our INPS members, Dawn Slack and Kevin Tungesvick, got local and national press coverage (Indianapolis Star, August 3, 2021 and USAToday) for raising the alarm about this abundant plant. Poison hemlock grows to about 6 ft (2 m) tall, has purple blotches on its stem and umbels of small white flowers. All parts of the plant contain the alkaloid coniine which, within hours of ingestion, causes trembling, salivation, weak pulse, and ultimately respiratory paralysis (Shep et al. 2009). Remember the execution of Socrates in 399 BC – this was the plant used.

Water hemlock, on the other hand, is a native species that thrives in wet habitats such as fens, marshes, and swampy woods. Thus you are much less likely to encounter it than poison hemlock. Water hemlock also has purple blotches on its stem, but is a somewhat shorter species and has broader leaflets with a serrate margin. The leaflet's veins exhibit a remarkable pattern in that they are aimed at the sinus between the marginal teeth. In other species the veins end at or near the apex of each tooth.

Paul Rothrock

Top: water hemlock

Bottom: poison hemlock

Water hemlock manufactures a different toxin than its counterpart – cicutoxin, a polyacetylene (Vetter 2004). This substance locks into neurons of the central nervous system causing delirium, nausea, convulsions, abdominal pains, seizures, vomiting – you get the idea, a set of horrible circumstances that frequently precede death. Both species may resemble other members of the carrot family such as celery (*Apium graveolens*), parsnip (*Pastinaca sativa*), and water parsnip (*Sium suave*). Both bloom in early summer.

By the way, poison hemlock has one more nasty trick up its petiole. As you seek to eradicate it, be sure to wear gloves. The sap is a phototoxin that, after exposure to ultraviolet light, will cause a rash of blisters and welts.

Spring — *continued from left*

guidance is available in "Nesting & Overwintering Habitat for Pollinators & Other Beneficial Insects" – *https://xerces.org/publications/fact-sheets/nesting-overwintering-habitat.*

Additional Resources

Books and online resources from Heather Holm – *www.pollinatorsnativeplants.com*

The Ohio State University Bee Lab – *https://u.osu.edu/beelab/native-bee-identification/*

Pollen Specialist Bees of the Eastern United States – *https://jarrodfowler.com/specialist_bees.html*

Host Plants for Pollen Specialist Bees of the Eastern United States – *https://jarrodfowler.com/host_plants.html*

Bryan Danforth: Host-plant Specialist Bees – Biology, Biodiversity, and Conserving Them in Your Backyard - *https://u.osu.edu/6plus/recordings/*

Stephanie Frischie, a member of the INPS West Central Chapter, is a Native Plant Specialist with the Xerces Society for Invertebrate Conservation. Throughout 2022 watch INPS Journal *for her observations on seasonal plants and their pollinators.*

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Shep, L.J., R.J. Slaughter, G. Becket, & D.M.G. Beasley. 2009. Poisoning due to water hemlock. Clinical Toxicology (Phila.) 47:270-278.

Vetter, J. 2004. Poison hemlock (*Conium maculatum* L.). Food and Chemical Toxicology 42:1373-1382.

Paul Rothrock is editor of the INPS Journal.

Native Plant Landscapes at

By Coralie Palmer

Welcome to the second part of the story of INPS's partnership with the Eiteljorg Museum and others. To briefly recap, the INPS Landscaping with Natives Team jumped at the opportunity to showcase the potential for landscaping with native plants at Eiteljorg's prominent location in downtown Indianapolis. This partnership also offers an opportunity for INPS to increase inclusivity and to educate about indigenous knowledge of native plants.

Mary Durkin

A portion of the Whitetail Deer planting as seen in October 2021, with species such as aromatic aster, Riddell's goldenrod, and Culver's-root.

The first two areas of this multi-phase, multi-year project were planted in 2021 – the Whitetail Deer Fountain in May and the prairie border in October. In this second part of the story, we focus on the designs; all plants used were straight native species.

The Whitetail Deer Fountain

This highly-photographed area posed relatively challenging site conditions, with a strong wind tunnel effect from neighboring buildings and water from the chlorinated fountain.

An arc of red-osier dogwood (*Cornus sericea*) provides a foundational structure to the design and a year round backdrop to the leaping deer, with swamp rose-mallow (*Hibiscus moscheutos*), switchgrass (*Panicum virgatum*), blue vervain (*Verbena hastata*), Culver's-root (*Veronicastrum virginicum*), and hoary skullcap (*Scutellaria incana*) completing the central arc. On the fountain side, sweeps of spotted Joe-Pye-weed (*Eutrochium maculatum*) and queen-of-the-prairie (*Filipendula rubra*) lead to the water, with wild hyacinth (*Camassia scilloides*) for spring color and Virginia blueflag (*Iris virginica*) bordering the pool.

On the far side of the central arc, a repeating pattern of Eastern bluestar (*Amsonia tabernaemontana*), golden Alexander (*Zizia aurea*), hairy penstemon (*Penstemon hirsutus*), prairie dropseed (*Sporobolus heterolepis*), and aromatic aster (*Symphyotrichum oblongifolium*) provide changing interest through the seasons. At the ends, great blue lobelia (*Lobelia siphilitica*), cardinal flower (*Lobelia cardinalis*), obedient plant (*Physostegia virginiana*), Virginia mountain-mint (*Pycnanthemum virginianum*), sweet coneflower (*Rudbeckia subtomentosa*), broad-leaved purple coneflower (*Echinacea purpurea*), beebalm (*Monarda fistulosa*), prairie blazing-star (*Liatris pycnostachya*), Riddell's goldenrod (*Solidago riddellii*), and a large stand of swamp milkweed (*Asclepias incarnata*) provide showy blooms for photographs and a bounty of resources for pollinators.

Across the walkway, under the Eiteljorg sign, the team planted a tapestry of sun loving native species. The diminutive field pussytoes (*Antennaria neglecta*); low growing purple poppy-mallow (*Callirhoe involucrata*) and prairie onion (*Allium stellatum*); prairie dropseed; bright yellow lanceleaf coreopsis (*Coreopsis lanceolata*) and airy flowering spurge (*Euphorbia corollata*). Delicate vertical accents are provided by pale-purple coneflower (*Echinacea pallida*) and rattlesnake master (*Eryngium yuccifolium*), while bronze big bluestem (*Andropogon gerardii*) and orange butterflyweed (*Asclepias tuberosa*) echo the warm tones of the museum facade.

Phase II - The Tallgrass Prairie

Reflected heat from the building and heat from the underground car park combine to produce hot, dry conditions along the front of the museum. Therefore, the design was inspired by our Midwest tallgrass prairie community.

From existing oakleaf hydrangea (*Hydrangea*

the Eiteljorg Museum: Part 2

quercifolia) on the west, a sweep of wild senna (*Senna hebecarpa*) leads into the long border of the prairie planting. A matrix of grasses – big bluestem, little bluestem (*Schizachyrium scoparium*), and prairie dropseed – compass plant (*Silphium laciniatum*), prairie-dock (*Silphium terebinthinaceum*), rosinweed (*Silphium integrifolium*), gray-headed coneflower (*Ratibida pinnata*), tall coreopsis (*Coreopsis tripteris*), and large swathes of wild quinine (*Parthenium integrifolium*) form the foundation of the planting. Interspersed are drifts of rattlesnake master, pale-purple coneflower, beebalm, and rough blazing star (*Liatris aspera*). Blue sage (*Salvia azurea*), blue false indigo (*Baptisia australis*), and hoary vervain (*Verbena stricta*) provide points of complementary color to the primarily yellow palette. Existing *Rudbeckia* were retained where possible, and their seeds spread in waves through the planting.

At the path edges, blocks of bright prairie sundrops (*Oenothera pilosella*) lie in between prairie dropseed. Repeating groups of prairie onion and butterflyweed line the front edge for summer color, while showy goldenrod (*Solidago speciosa*) and aromatic aster provide floral resources in the fall.

On the east side, a maintenance path edges the prairie plantings. Smooth sumac (*Rhus glabra*) and ninebark (*Physocarpus opulifolius*), underplanted with blue mistflower (*Conoclinium coelestinum*) transition to the existing trees bordering the east of the museum.

Species Selection

The team combined ecological and cultural considerations in the designs. Where possible given site conditions, we tried to echo native plant communities, to include species with high ecological value, and to plan for successional blooming through the seasons. The principles used for our choices are covered in more detail at *https://indiananativeplants.org/the-science-explained/*. Given the prominent positions of these two areas, aesthetics were also a key consideration for the museum.

Being cognisant and respectful of the cultural importance of native plants to indigenous peoples is central to this work. With the aid of Dani Tippman and Karen La Mere, we have been able to include a number of species with ethnobotanical uses in these plantings (by the way, see Karen's presentation on Native Uses of Nature's Bounty on the INPS YouTube Channel at *https://m.youtube.com/watch?v=lgRr5O3tKms)*. Ethnobotanical species from 2021 include beebalm, rattlesnake master, red-osier dogwood, Culver's-root, several goldenrods, lobelias, and *Silphium* species. A third planting phase on Eiteljorg's wooded east side is in the early design stage; it will focus on plants with indigenous ethnobotanical links and include interpretive signage. Plants in this area will include spicebush (*Lindera benzoin*), hazelnut (*Corylus americana*), wild strawberry (*Fragaria virginiana*), wild ginger (*Asarum canadense*), violets (*Viola* spp.), eastern redbud (*Cercis canadensis*), and jewelweed (*Impatiens capensis*). If you have interest or expertise in this area, please contact Coralie Palmer, *landscape@indiananativeplants.org*.

Coralie Palmer is on the board of directors for INPS and the Indiana Wildlife Federation, is the founder of Sugarbush Ecological Landscapes, and is chair of the INPS Landscaping with Natives Team.

Florathon 2022: The Time Is NOW!

Wes Homoya provided us with four excellent reasons to participate in Florathon 2022 (see your winter issue of the *INPS Journal*). Now it is time to translate your good intentions into actions. Review the guidelines at *https://indiananativeplants.org/inps-sponsored-events/florathon/*. And have some fun while raising dollars for your favorite organization.

The 2021 INPS Photo Contest

By Lee Casebere

The third year of the INPS Photo Contest reaped some fine photos to vie for the top places. Judging was done by me and INPS member and wildflower photographer Perry Scott. By the numbers there were 62 entries in the plant portrait category and 20 in the garden scene category. There were only two student entries in both the plant portrait and the garden scene segments.

The garden scene category has far fewer entries than the plant portrait category, and they tend toward open, sunny scenes heavily weighted with prairie plants. I would dearly love to see photos of more shady scenes, especially those showing displays of spring ephemerals. That said, I really like the first-place photo in the garden scene category. It's a bit more of a close-up scene, but it shows a wonderfully diverse collection of colorful wildflowers – a great example of how attractive a garden with all native wildflowers can be.

Given that entries were down this year begs the question as to what the 2022 contest should look like. Should the student category be dropped? Do other categories need to be evaluated for new ideas or new approaches? These questions will be guided by the new and excellent leadership of Greg Shaner (INPS Secretary and member of the West Central Chapter). My tenure in leading the Photo Contest has been a distinct pleasure. And it has been successful in bolstering the cache of beautiful wildflower images for INPS to have available for purposes of the organization.

All 2021 winners may be viewed at *https://indiananativeplants.org/inps-sponsored-events/photo-contest/*

Important note from INPS President, Ellen Jacquart:

Our thanks to Lee Casebere for starting the INPS Photo Contest and expertly managing it for three years! Definitely a job well done. The new chair of the contest, Greg Shaner, recently posted rules and guidance for the 2022 contest. INPS Photo Contest winners will be chosen in two categories – Native Plant Portrait and Consorting with Pollinators. Check this link for details: *https://indiananativeplants.org/inps-sponsored-events/photo-contest/*

Landscape Scene Category

1st place: *Bee balm (*Monarda fistulosa*), dense blazing star (*Liatris spicata*), black-eyed susan (*Rudbeckia hirta*), cardinal flower (*Lobelia cardinalis*), broad-leaved purple coneflower (*Echinacea purpurea*), sweet Joe-pyeweed (*Eutrochium purpureum*), and others; by René Stanley.*

2nd place: *Broad-leaved purple coneflower (*Echinacea purpurea*), garden phlox (*Phlox paniculata*), false sunflower (*Heliopsis helianthoides*); by Melanie Helmuth.*

Holliday — continued from back page

leaf toothwort, spring beauty, and more.

Turn around (unless you wish to take the longer, uphill path) and head back south. What do you see on the return that you missed earlier? Any mottled foliage of trout-lily? Continue to the corner and look for signs of early meadow-rue, bellwort, and non-native English wood hyacinth. Continue around the pond to the stand of beech (*Fagus grandifolia*) trees. Any sign of the colony of white trout-lily or a colony of false rue-anemone?

That may be all for today. Plan to come back in a couple of weeks (well, earlier is okay too). The pastel/white ephemerals of early spring will be past blooming and starting to wither. The trees won't be fully leafed out yet but a different suite of wildflowers will show their color – the blue of Virginia bluebells; the maroon of wild ginger, trillium, and pawpaw trees (*Asimina triloba*); the pink of wild geranium; the yellow of bellwort, marsh marigold, and yellow trout-lilies; the purple of violets; and the green of green violets, early meadow-rue, Jack-in-the pulpit, and perhaps even green dragon. Come! Come often to my urban oasis, Holliday Park.

Norma Wallman's book, Wildflowers of Holliday Park*, lovingly illustrates the wildflowers throughout the seasons. Norma is a member of the Central Chapter of INPS.*

Norma's Checklist of Holliday Park Spring Ephemerals

bellwort, *Uvularia grandiflora*
bloodroot, *Sanguinaria canadensis*
cut-leaf toothwort, *Cardamine concatenata*
daffodils, *Narcissus* spp.
Dutchman's-breeches, *Dicentra cucullaria*
early meadow-rue, *Thalictrum dioicum*
English wood hyacinth, *Hyacinthoides non-scripta*
false rue-anemone, *Enemion biternatum*
green dragon, *Arisaema dracontium*
green violet, *Hybanthus concolor*
Jack-in-the-pulpit, *Arisaema triphyllum*
marsh marigold, *Caltha palustris*
rue-anemone, *Thalictrum thalictroides*
salt-and-pepper or harbinger-of-spring, *Erigenia bulbosa*
sharp-lobed hepatica, *Anemone acutiloba*
spring beauty, *Claytonia virginica*
trillium, *Trillium* spp.
violet, *Viola* spp.
Virginia bluebells, *Mertensia virginica*
white trout-lily, *Erythronium albidum*
wild geranium, *Geranium maculatum*
wild ginger, *Asarum canadense*
yellow trout-lily, *Erythronium americanum*

Plant Portrait Category

1st place: *Royal catchfly (*Silene regia*); by Bret Furgason.*

2nd place: *Wild columbine (*Aquilegia canadensis*); by René Stanley.*

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Springtime in Holliday Park

By Norma Wallman

Norma Wallman

Top: Flowers of sharp-lobed hepatica. This profusion of wildflowers is so thick that the leaves of hepatica are hidden by those of Dutchman's-breeches.

Bottom: Salt-and-pepper or harbinger-of-spring gladdens the heart by providing sure signs that winter is waning. It may be spotted in several areas at Holliday Park.

Early spring, when the first sprouts of green emerge, when the days are getting longer and the weather may vary from cold and snowy to bright, sunny, and warm. I'm eager to go to Holliday Park to see what Nature has to offer.

Holliday Park, a 94-acre Indianapolis park six miles north of downtown, is my springtime oasis. It is surrounded by residential neighborhoods and on the east by White River. It has ruins, a playground, a splash pool, well established hiking trails, hills, a pond, and streams. It is a great place to walk, to explore, to be with nature, and a fantastic place to see the early spring ephemerals with their bright and colorful blooms.

In late March, head behind the Nature Center, down the 100 steps of trail 6 and continue ahead up the steps of trail 6. As you go up the steps, look closely for tiny flowers with white petals and black anthers of salt-and-pepper or harbinger-of-spring [see checklist on p. 15 for scientific names of spring ephemerals]; they are easily overlooked in the brown leaf litter. Once up the steps, turn right (toward the river), and walk along the crest of the trail to Hepatica Hill. Be sure to go on a warm and sunny day, not too early and not too late, for sharp-lobed hepatica needs sun and warmth to fully open. Note the variety of pastel colors: pink, white, or purple, a striking contrast to the brown leaf litter. Be amazed at how many blossoms there are! See that it is appropriately named Hepatica Hill. Nearby you may find bloodroot or rue-anemone. In a few days or a week or two (depending on the weather) the hepatica will be joined by cut-leaf toothwort, spring beauty, and Dutchman's-breeches. Pause a while: watch, listen, feel. Is the wind causing the flowers to sway? Are there little black bugs (ants?) crawling on the hepatica blossoms? Flying insects? A mourning cloak butterfly (*Nymphalis antiopa*)? Listen. An insect buzzing? The very faint crackling caused as little feathered or furry beings displace the dry, brown leaves? Feel the sun on your back, the wind against your face. There is a lot to experience at this "urban" hillside. Take time to embrace it. Had your fill? Head down the hill toward trail 8 and then turn left.

As you walk northward, look up and then down … and listen. Are the trees budding or the leaves starting to emerge? Are there sandhill cranes (*Antigone canadensis*) heading north? Do you find more salt-and-pepper in bloom? Have the skunk cabbage leaves started to fill the low areas of the seeps? The tiny yellow flowers on the spadix are nearly gone but the huge leaves emphasize the number and location of winter blooming individuals. Also in the seeps, has the foliage of marsh marigold emerged? Back along the trail, can you find the delicate looking foliage of Dutchman's-breeches and the long narrow leaves of spring beauty? Have those non-native daffodils, planted long ago, begun to sprout? As you approach the end of the main path, be sure to look up at the hillside. Has it begun to turn green? Think about coming back in a week or two to see the hillside FILLED with thousands of spring ephemerals – bloodroot, the spikes of Dutchman's-breeches, cut-

Holliday — continued on page 15